



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,970	11/21/2003	Alan K. Wu	60,680-756	3569
7590		07/13/2006	EXAMINER DUONG, THO V	
Dykema Gossett PLLC Suite 300 39577 Woodward Avenue Bloomfield Hills, MI 48304			ART UNIT 3753	PAPER NUMBER

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/719,970	Applicant(s) WU ET AL.	
	Examiner Tho v. Duong	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-15, 17-21 and 24-35 is/are pending in the application.
- 4a) Of the above claim(s) 19, 20 and 24-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3, 5-15, 17-18, 27 and 33-35 is/are allowed.
- 6) ☒ Claim(s) 28 and 29 is/are rejected.
- 7) ☒ Claim(s) 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of applicant's amendment filed 5/4/06 is acknowledged. Claims 1-3,5-15,17-21 and 24-35 are pending. Claims 19-21 and 24-26 remain withdrawn from further consideration.

Response to Arguments

Applicant's arguments with respect to claims 28-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bushchow (US 2,662,749) in view of F. A. Burne et al. (US 3,323,586). Bushchow discloses (figures 1-2) a heat exchanger comprising an outer tube (20) having an outer surface; an inner tube (16) received inside the outer tube and concentric therewith, wherein an axial fluid flow passage is formed between the inner and outer tubes; a first inlet (14) and a first outlet (13) in fluid communication with the axial passageway, the first inlet and the first outlet being axially spaced from one another; at least one circumferential fluid passageway being formed along the outer surface of the outer tube (helical passageways formed between helix fins); and a corrugated strip fin (80) being arranged in the circumferential fluid flow passageways, each of the strip fins comprising a plurality of rows of corrugations (81), the corrugations each comprising a top portion, a bottom portion and a side wall connecting the top and bottom portion, the bottom

Art Unit: 3753

portions of the corrugations being in contact with the outer tube; the heat exchanger include at least one radially inner circumferential flow passageway (37') having an inner strip fin (46) and at least one radially outer circumferential flow passageway (38') having an outer strip fin (50), the inner and outer strip fins being in thermal contact with one another; and flow communication is provided between the inner and outer flow passageways; a housing (21) comprising a sidewall having inner surface, the sidewall surrounding the outer tube (20) with an annular space being formed between the inner surface of the sidewall and the outer tube; the housing further comprises a second inlet (26) and a second outlet (27) extending through the sidewall being disposed on one side of the side wall, wherein the circumferential fluid flow passage is provided in the annular space between the housing and the outer tube. Bushchow does not disclose that second inlet and the second outlet are circumferential spaced from one another. Burne discloses (figures 1-3) a concentric heat exchanger comprising an inner axial flow passage and an outer circumferential passage wherein the second inlet and second outlet (18,19) are circumferential spaced in 180 degrees from one another so that all of the outer fluid must travel across the heat exchanger to exit, which enhances the heat transfer efficiency between the inner fluid and the outer fluid. Since Bushchow and Burne are both from the same field and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bushchow's heat exchanger with Burne's teaching of circumferential spaced inlet and outlet for a purpose of enhancing the heat transfer efficiency between the inner fluid and the outer fluid.

Allowable Subject Matter

Claims 1-3,5-15,17-18,27 and 33-35 are allowed.

Application/Control Number: 10/719,970
Art Unit: 3753

Claims 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

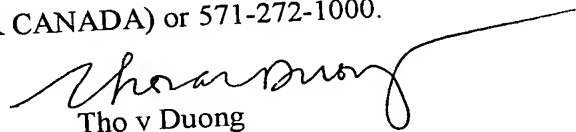
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/719,970
Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tho v Duong
Primary Examiner
Art Unit 3753



TD
July 7, 2006